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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PAN, DANIEL H

ART UNIT PAPER NUMBER

2183

DATE MAILED: 07/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/650,301

Applicant(s)

DRABENSTOTT ET AL.

Examiner

Daniel Pan

Art Unit

2183

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 25-33,56-79 (claims 1-24, 34-55 have been canceled) is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25-59,61,62,66-69,73-76,78 and 79 is/are rejected.
- 7) ☒ Claim(s) 60,63-65,70,72 and 77 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. Claims 25 -33, 56-79 are presented for examination. Claims 1-24, 34-55 have been canceled.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 25-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fernando (5,802,360) in view of Dinkjian et al. (5,465,374).

3. As to claim 25, Fernando disclosed at least :

- a) a set of arithmetic condition codes (see the condition codes greater, equal etc in col.4, lines 58-64);
- b) defining side effects of a plurality of scalar conditions [c][v] on an instruction by instruction basis (e.g. see the C and V bits in the PSW register in col.4, lines 35-56)
- c) setting a set of arithmetic scalar flags [C] [V] to save the determined side effects (see the C V inputs in col.4, lines 31-56 );
- d) specifying condition code [eq0] utilizing a compare instruction [cmp] (see the extension of condition code eq0 to the compare instruction cmp in col.4, lines 53-66);
- e) updating the arithmetic flags based on the condition code (see the setting of arithmetic flag based on the condition in col.4, lines 61-64).

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4. Fernando did not specifically teach the defining of the arithmetic condition flags as claimed. Instead, Fernando taught a plurality of arithmetic condition codes (see the `comp equal` and `cmp greater` in col.4, lines 55-64) and arithmetic scalar flags (C,V). However, Dinkjian disclosed a system including the table for defining a plurality of condition flags (see Table A, the x,y,z bits representing condition codes in fig.6). It would have been obvious to one of ordinary skill in the art to use Dinkjian in Fernando for defining the arithmetic condition flags as claimed because the use of Dinkjian could provide Fernando the control ability to integrate the condition codes in a predefined set of instruction format, such as flags, or operand fields, thereby, enhancing the control adaptability of the system user, and it could be readily achieved by defining the arithmetic condition flags of Dinkjian into the configuration file of Fernando with modified control parameters, such as the condition flags of a predetermined width, so that the arithmetic condition flags of Dinkjian could be recognized by Fernando in order to increase the interface control of the system, and in doing so, provided a motivation.

5. As to claim 26, Fernando also combining the previous state with the result of the condition test (see the feedback flag combined with the newflag in fig.4).

6. As to claim 27, Fernando also included greater than and equal to (e.g see col.4, lines 53-65).

7. As to claim 28, Fernando also tested the two operands (e.g see col.2, line 55, the compare test, see also other tests in col.4, lines 56-63).

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8. As to claim 29, Fernando's compare instruction [CMP.eq r1, \$0] was also used to specify data type [\$] ( see the \$ parameter for specifying the numerical data type in col.2, line 55).
9. As to claim 30, Fernando's also included Boolean combination (see CMP.eq, see also col.2, lines 1-11 for the background of combinatorial logic).
10. As to claim 31, Fernando's also including the branching in sequence processor (see the branch in col.2, line 56). Fernando was directed to the execution of the flag-modifying instructions in a different number of clocks (e.g. see col.1, lines 51-56), therefore, it is a sequence processor.
11. As to claims 32, 33, Fernando also conditionally executing in a sequence processor and based on a complex condition (see branch on true condition and the condition extensions see col.5, lines 6-15).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 56-59, 61, 62, 66, 71, 73-76, 78, 79 are rejected under 35 U.S.C. 102(e) as being anticipated by Fernando (5,802,360) .

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13. As to claims 56, 66, Fernando disclosed at least :

a) setting arithmetic scalar flags [flag bit] based on at least one side effect of execution of a first instruction [CMP] (col.2, line 55)

b) setting arithmetic condition flags (BRA.iff, see if true and if not true in col.5, lines 7-20) based on arithmetic scalar flag [r1=0,1] as specified by the first instruction [CMP];

c) determining whether to execute a second instruction [ADD] based on the state of the arithmetic condition flags (see BRA.iff in col.2, lines 56)

d) executing the second instruction (see the execution ADD in col.2, line 57).

14. As to claims 57,67, Fernando's first instruction was also a compare instruction. (see col.2, line 55 CMP).

15. As to claims 58, 68, Fernando also included at least zero indication.

16. As to claims 59, 69, Fernando also included the compare instruction [CMP] and previously executed instruction (previously instruction not explicitly shown, but it is understood r1 had to be increased or decreased by, for example, Inc r1 or Dec r1 instruction).

17. As to claims 61, 71, Fernando also included combinational logic (see the background of combinatorial logic circuit in col.2, lines 1-11).

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18. As to claim 62, Fernando's second instruction also effect arithmetic scalar flags (see ADD instruction).

19. As to claim 73, Fernando disclosed at least:

a) storage device for storing arithmetic flags (see PSW register in col.4, lines 35-56);

b) execution unit for executing a first instruction [CMP], generating arithmetic scalar flag [Flag] as a side effect [result] of the execution, storing the flag in the storage (e.g see first instruction and the flag bit in col.2, line 55, see the storage of the flag in col.4, lines 35-56);

c) generating unit for generating an arithmetic condition flag [True or False] utilizing both the arithmetic flag (see col.2, lines 55-56, see col.5, lines 7-20 for determination of the true or false condition) and an opcode bit [eq] from the first instruction.;

d) conditionally executing a second instruction [Add] based on the state of the arithmetic condition flag (see the instruction ADD executed if true, in col.2, lines 56-57).

20. As to claim 74, Fernando's first instruction was also a compare instruction. (see col.2, line 55 CMP).

21. As to claim 75, Fernando also included at least zero indication.

22. As to claim 76, , Fernando also included the compare instruction [CMP] and previously executed instruction (previously instruction not explicitly shown , but it is



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understood r1 had to be increased or decreased by , for example, Inc r1 or Dec r1  
instrucion).

23. As to claim 78, Fernando alos included combinatroial ligic (see the background  
of combinatorial logic circuit in col.2, lines 1-11).

24. As to lciam 79, Fernando's secodn instrucion also effect arithmetic sacalr flgs  
(see ADD instrucion).

25. Claims 60, 70 , 77 are objected to as being dependent upon a rejected base  
claim, but would be allowable if rewritten in independent form including all of the  
limitations of the base claim and any intervening claims. Noe of the priort art of record  
further teaches the second instruction comprieses one selectable conditional execution  
instrcuiton opcode bit specifying the condition execution of the second instruction.

26. Claim 63 is objected to as being dependent upon a rejected base claim, but  
would be allowable if rewritten in independent form including all of the limitations of the  
base claim and any intervening claims. None of th eprior art of record further teaches  
the operation performed by the first instrucion on packed data comprising a plurlaity of  
data elements , setting one arithmetic flag for each data element of the packed dat.

27. Claims 64, 72 are objected to as being dependent upon a rejected base claim,  
but would be allowable if rewritten in independent form including all of the limitations of

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the base claim and any intervening claims. None of the the prior art of record further teaches the secodninstrcuiiton affects the state of the arithmetic condition flags.

28. Claim 65 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record teaches the execution of the first instrucion by first processign eleemnt and the conditionnally execution of the second instrucion by a second processig element.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a)Kohn (5,101,484) is cited for the background teaching of the arithmetic condition flag [zero] (e.g. see fig.4).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Pan whose telephone number is 703 305 9696. The examiner can normally be reached on M-F from 8:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chan, can be reached on 703 305 9712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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